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ABSTRACT

Self-efficacy, a person's perceived capacity to execute a behavior required to produce a desired oucome, can affect motivation and behavior. It appears that individuals gain self-efficacy information from performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal. Effective clinical interventions must promote informational changes in these four areas. Self-efficacy research with children can provide treatment implications for child psychotherapy. Most of the self-efficacy research has focused on performance accomplishments and has shown that actual experience is a powerful intervention for strengthening the self-efficacy of children. Other research has found that: (1) a comprehensive intervention to enhance self-efficacy can be structured in a psychotherapeutic day camp setting; (2) attributing achievement to children's effort and ability increases their self-efficacy; (3) self-efficacy increases when children master social competence skills in conflict-free settings and then generalize these skills to conflicted settings; (4) the impact of vicarious experience may vary with the child's locus of control orientation; (5) modeling can have either a positive or a negative impact on self-efficacy; and (6) short-range goals stimulate children's motivation better than do long-range goals. Self-efficacy research with children needs to focus more on the impact of vicarious experience, verbal persuasion, and emotional arousal on the self-efficacy of children. Further research is needed to clarify the cognitive processes in children that produce the efficacy expectation. Five pages of references conclude the paper. (NB)

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# TREATMENT IMPLICATIONS DERIVED FROM SELF-EFFICACY RESEARCH WITH CHILDREN

BY

WILLIAM G. ROTH

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A doctoral research paper submitted to
Rosemead School of Psychology
in partial fulfillment of the requirements
for the degree of
Doctor of Psychology

La Mirada, California

1985

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Doctoral Research Paper
for the Degree of Doctor of Psychology

ROSEMEAD SCHOOL OF PSYCHOLOGY

BIOLA UNIVERSITY

WILLIAM G. ROTH

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Abstract

Self-efficacy research with children provides treatment implications for child psychotherapy. Self-efficacy theory is explained briefly, and its ability to account for a wide range of behavioral change is seen in recent research applications. A large proportion of the published research focuses on performance accomplishment. Treatment in a psychotherapeutic day camp enhanced self-efficacy. Attributing achievement to children's effort and ability increased their efficacy. Models had either a positive or negative impact on self-efficacy depending on the length of their persistence at an insolvable task. Conflict-free settings promote psychosocial competence better than conflict settings. Short-range goals stimulate children's self-motivation better than long-range goals. Recommendations are made for future research to establish self-efficacy theory as an organizing model for psychotherapy with children.

## Treatment Implications Derived from Self-Efficacy Research with Children

A major review of research on child psychotherapy (Barrett, Hampe, & Miller, 1978) concludes that "child psychotherapy research has suffered for a lack of a model that specified its task" (p. 429). This lack of a specified therapeutic task has also been experienced by this author in his study, training, and psychotherapy with children. Symptoms can be treated with behavioral techniques and developmental growth may be facilitated by therapeutic means (Mahler, Pine, & Bergman, 1975). However, a metatheoretical paradigm is needed to focus the therapists's efforts to treat the child's self. If therapy is a means to an end, a model is needed to clarify what the end product or effect is to be in the psychotherapeutic treatment of children.

Bandura's (1977a) concept of self-efficacy appears to supply a potential missing link to integrate theoretical and research findings into a coherent model for psychotherapy with children. Bandura's construct is theoretically based in social learning theory and empirically based in an extensive research literature. Lazarus (1980) states that both of these features are important for psychotherapy in

this age of consumerism and interrelatedness of treatment with parenting, development, and education.

This paper will briefly explain the concept of self-efficacy and provide some examples of recent applications. The main body of the paper will derive treatment implications from a review of self-efficacy research with children. The paper will conclude with recommendations for future research.

## Explanation of Self-Efficacy Theory

Self-efficacy theory assumes that people are causally important in their lives (Mondell & Tyler, 1981). Self-efficacy is a person's perceived capacity to execute a behavior required to produce a desired outcome. It is one of the most central aspects of the self-system, which is comprised of cognitive structures and subfunctions for perceiving, evaluating, motivating, and regulating behavior (Bandura & Schunk, 1981). These cognitive structures and subfunctions serve as a central processor of efficacy information by assessing and integrating information from a variety of sources. People select a behavior based upon their perceived capability or efficacy to execute a behavior in light of the information processed by the cognitive central processor.

Bandura (1977a) distinguishes efficacy expectations from outcome expectations. The latter are defined as a person's estimates that a behavior will produce certain

outcomes. The former are defined as convictions that a person can execute the behavior required to produce the outcomes. This distinction between outcome expectations and efficacy expectations is important because people can believe that a behavior will produce certain outcomes, but if they doubt their capability to perform the necessary activity, such perceived inefficacy will inhibit the execution of the behavior. Thus, expectations of personal efficacy affect both initiation and persistence of behavior. Efficacy perceptions affect thought patterns, actions, and emotional arousal as well as the amount of effort a person will expend and how long this effort will persist (Bandura, 1980, 1982). In other words, how people judge their capabilities affects their motivation and behavior.

The cognitive central processor of efficacy information processes and integrates information regarding a person's capacity to act. The processed efficacy information then regulates a person's choice of behavior and expenditure of effort. Bandura (1977a) assumes that psychotherapeutic treatment is a means of altering the information from which personal efficacy is induced. As the acquired information changes, the sense of self-efficacy changes, resulting in a change of behavior. Bandura (1977a, 1977b) has grouped the sources of efficacy information into four main categories:

1. Performance accomplishments are assumed to be the most dependable source of efficacy expectations because they are based on the individual's personal experiences.

Successful experiences heighten mastery or efficacy expectations. Repeated failures lower them.

2. Vicarious experience involves observational learning. Observing the activities of others similar to oneself and the subsequent consequences of these activities can heighten or lower efficacy expectations in observers. Vicarious experience persuades people that they can do what they see others do and that the same consequences will most likely result.

3. Verbal persuasion leads people, through persuasive suggestion, to believe that they possess capabilities that will enable them to achieve what they want to accomplish. Efficacy expectations induced in this manner are assumed to be weak due to the power of disconfirming experiences to extinguish perceptions of efficacy.

4. Emotional arousal is a physiological state in stressful and taxing situations. This visceral arousal serves as an informative index of personal competency. According to Bandura's (1977a) theory, heightened self-efficacy usually occurs when a person is not experiencing aversive arousal. Lowered self-efficacy usually occurs with increased tension and visceral agitation. Bandura's use of the word "usually" leaves room for findings from social facilitation theory which indicate that the presence of others may affect a person's capacity to perform a task either positively or negatively.

Bandura (1977b) asserts that most therapeutic interventions can be classified into one or a combination of these four categories. Cognitive events in the central processor mediate the information from these four sources. The individual infers a degree of self-efficacy from this information.

These four categories provide a structure to assess the therapeutic relevance of self-efficacy research. They can help the therapist design treatment plans to alter the mediating cognitive events to enhance the self-efficacy of the client. First, the scope of self-efficacy research will be reviewed. Then, these categories will be used to group and to assess the therapeutic implications of self-efficacy research with children.

## Range of Recent Applications

Self-efficacy theory has already been used in a wide variety of applications. Before turning to potential applications to clinical child therapy, the next section summarizes a few examples of the wide applications of self-efficacy theory. The first examples are most relevant to performance accomplishments, which is followed by examples relevant to the other three types of influences of self-efficacy.

### Performance Accomplishment

Theoretically (Bandura, 1977a), performance accomplishment has the most salient impact on efficacy expectations.

Lee (1983) has shown how assertiveness and self-efficacy are related. Performance accomplishment has been shown to be an important variable in enhancing the self-efficacy needed for overcoming alcoholism (Clifford, 1983) and in maintaining the cessation of smoking (Condiotte & Lichtenstein, 1981; Prochaska, Crimi, Lapsanski, Martel, & Reid, 1982). Self-efficacy and athletic performance have been shown to correlate positively (Barling & Abel, 1983; McAuley & Gill, 1983). Goal setting and task performance have been shown to be a function of self-efficacy (Bandura & Cervone, 1983; Locke, Frederick, Lee, & Bobko, 1984). Past performance accomplishments have been shown to affect self-efficacy in relation to educational majors and career selection (Betz & Hackett, 1981, 1983; Hackett & Betz, 1981; Stumpf, Austin, & Hartman, 1984; Taylor & Betz, 1983). Performance accomplishments have been shown to affect self-efficacy related to self-esteem (Gecas & Schwalbe, 1983), pain in childbirth (Manning & Wright, 1983), and anxiety (Haemmerlic & Montgomery, 1982; Hoelscher, Lichstein, & Rosenthal, 1984).

Vicarious Experience

Symbolic modeling and participant modeling influence the self-efficacy perception of phobics (Bandura, Adams, Hardy, & Howells, 1980; Biran & Wilson, 1981; Ladouceur, 1983). Observational learning has also been shown to be relevant to assertiveness training programs (Pentz, 1981).

Verbal Persuasion

Studies have shown that verbal persuasion is an effective treatment for agoraphobia (Rachman, 1983), but is less effective than performance accomplishment (Williams & Rappoport, 1983). Use of verbal instructions in a college classroom has been shown to be an effective means of developing self-regulated learners (Corner & Mandinach, 1983).

Emotional Arousal

Bandura and Adams (1977) have shown that perceived self-efficacy mediates anxiety arousal. The role of efficacy expectations in fear reduction has been explored by Bandura (1983), Bandura, Reese, and Adams (1982), and Maddux and Rogers (1983). The perceived self-efficacy in relation to depression (Kanfer & Zeiss, 1983) and mood swings (Devins, Binik, Gorman, Dattel, McCloskey, Oscar, & Briggs, 1982) has also been studied.

## Self-Efficacy Research Related to the Treatment of Children

This section reviews self-efficacy research with children, focusing in turn on performance accomplishments, vicarious experience, verbal persuasion, and finally emotional arousal. Since cognitive operations that mediate efficacy expectations are based on information in these four categories (Bandura, 1977a), effective clinical interventions must promote informational change in these categories. An increased understanding of how interventions alter

personal information in these areas would assist the clinician in formulating treatment plans and objectives.

Performance Accomplishment

Performance accomplishments are assumed to be the most influential source of efficacy information. Bandura (1977b) says this category provides the most dependable information for efficacy expectations because the information is derived from the individual's personal experiences. It is not surprising that this category has been the focus of more research than the other three categories. Consequently, this section is more lengthy than the other three. The studies vary widely in their focus. For example, some studies focus on social skills and others on academic skills. Nonetheless, the common element in this group of studies is the focus on personal experience and mastery of the means of enhancing self-efficacy.

One of the most comprehensive self-efficacy interventions with children was a treatment in a psychotherapeutic day camp (Mondell, Tyler, & Freeman, 1981). Self-efficacy was considered one component of psychosocial competence. Although other modes of treatment were employed, enhancing performance accomplishment was a primary therapy goal of an intervention that combined group and milieu approaches. The specific techniques varied with the child and the situation. Interventions in relevant everyday events permitted the children to experience directly how their feelings and behaviors affected others. For example, conflicts with

other children, impatience with camp regulations, and inappropriate expression of negative feelings provided opportunities for counselors to intervene. Counselors helped the children enhance their mastery of negative feelings by conflict resolution without physical violence. Self-efficacy was promoted in a number of other areas through typical camp activities such as indoor and outdoor games, music, dramatics, arts and crafts, and swimming. Self-efficacy of the children was assessed at the beginning and end of the camp with the Psychosocial Competence Incomplete Stories Test (Mondell & Tyler, 1981). The results support the idea that performance accomplishments in a therapeutic camping experience can promote psychosocial efficacy. Thus, therapists could consider structuring treatment plans in cooperation with state or county agencies that might offer such a program to supplement individual therapy sessions.

In some cases, parents may undermine improvements achieved in their children's self-efficacy. Mondell et al. (1981) found that an increase of children's self-efficacy and personal control enhanced their ability to accomplish their own goals. The parents, in some cases, perceived this as contrary to their own goals. Such a finding is less surprising when viewed from a family systems perspective. The entire family system can support or undermine increased self-efficacy in the child.

An example of an intervention that treats a child with the family system in mind was developed by Jaycox, Baranowski, Nader, Dworkin, and Vanderpool (1983). Based on social learning theory, their project aimed at reducing cardiovascular risk in families with children in the third through sixth grades. Children learned information and practiced activities to develop the skills they needed to promote positive health habits in their families. The experimenters eventually involved the parents in the experimental training activities. The parents learned the rationale and value of the goals and health habit changes their children were advocating.

Although self-efficacy was not specifically measured, the treatment's impact on the children's self-confidence to influence their families positively seems compelling. The researchers highlighted three important components of their treatment that they believe account for the treatment's effectiveness for both the children and the families. These three aspects were that (a) the children learned actively through doing, (b) the activities were fun and low in cost, and (c) there was a progression across activities from the simple to the more complex. These three components were designed into activities that developed skills in recognizing high-salt and high-saturated fat foods, preparing such foods, resisting pressures to eat such foods, increasing aerobic activity, and providing support to peers and family members learning these skills.

The difference between this study and the Mondell et al. (1981) study is the parental involvement and awareness of treatment goals. The Jaycox et al. (1983) study is cited here to suggest how parental involvement and awareness of treatment targets might prevent the parents from undermining therapeutic achievements. Further research is needed to assess how the family system can be used as an ally rather than as an enemy of self-efficacy based therapeutic goals.

Problems with inefficacy in children are often encountered in the educational sphere. Schunk (1982) found that past effort attributional feedback ("You have been working hard") was superior to two other conditions for improving children's self-efficacy in subtraction ability. One other condition, with feedback that attributed future effort to achievement ("You need to work hard"), was no more effective than a no-feedback control condition. Teachers gave the different types of feedback after developing the children's subtraction skills by an instructional method. Thus, performance accomplishment increased children's self-efficacy most dramatically when verbal feedback was used with it to attribute their success to their effort.

Treatment implications from these findings point to the importance of helping a child derive a sense of self-efficacy from past accomplishments. The clinician may need to build successful performance accomplishments into the treatment plan when the child has an inadequate history of successes. This is necessary, as Schunk (1982) points out,

because causal explanations for achievement promote self-efficacy best when past achievement is linked with personal effort. Conversely, imploring a child to work harder may undermine perceived self-efficacy since the implication may be that the child's efforts are inadequate for achieving according to expectations. Such perceived inefficacy can affect a child's choice of activities, expenditure of effort, and perserverance in the face of difficulties.

Another study by Schunk (1983a) compared the impact of ability versus effort attributional feedback on perceived self-efficacy. This study was similar in design to Schunk's 1982 study. Again, mathematical competency served as the measure of performance accomplishment. Self-efficacy levels were assessed prior to treatment. A training procedure based on increased performance accomplishment enhanced subtraction skills. Subjects were monitored for progress and received either ability attributional feedback ("You're good at this"), effort attributional feedback ("You've been working hard"), ability plus effort attributional feedback ("You're good at this and you've been working hard"), or no attributional feedback. All three treatment conditions improved personal efficacy significantly more than the no-feedback condition. The perceived efficacy of children in the effort and ability plus effort feedback groups did not differ significantly from each other. However, children receiving only ability feedback judged themselves to be the most efficacious. Schunk (1983a) offers a plausible

explanation for this difference. Children receiving only ability feedback perceived they had expended less effort than those receiving only effort feedback. The same degree of success achieved with less effort most likely will strengthen perceived self-efficacy more than when greater effort is expended.

When considering treatment implications from this study, it is important to note that both effort and effort plus ability feedback enhanced perceived efficacy. However, ability attribution feedback accounted for a significantly higher self-efficacy perception. Thus, the implication is that while both effort and effort plus ability feedback enhance self-efficacy, the clinician should consider attributing performance accomplishment to ability in different situations to enhance self-efficacy in children.

Schunk's (1982, 1983a) studies only focused on the achievement of mathematical skills. It seems plausible that the treatment implications are applicable to a wide range of treatment issues. Future research on effort attribution and performance accomplishment needs to test this possibility.

Antisocial behavior is a problem frequently diagnosed in children who are brought for treatment. Typically, treatment interventions are planned to alter the child's self-evaluations of his or her social behavior. Wheeler and Ladd (1982) make a distinction between the child's self-evaluation of social behavior and self-perception of social

relationships (i.e., popularity or peer acceptance). They contend that understanding these self-perceptions of the child will increase the clinician's understanding of the child's views of his or her own social competence. Thus, they conceptualize social competence as skillful social behavior following Bandura's (1977a) construct of self-efficacy.

The Children's Self-Efficacy for Peer Interaction Scale (Wheeler & Ladd, 1982) was developed as a measure of elementary school children's self-efficacy for social situations with peers. Two interaction contexts--conflict and non-conflict--are depicted in the scale. Among other uses, this scale has potential for helping clinicians identify children needing treatment to enhance their perceived efficacy in social situations. It seems reasonable that the effectiveness of interventions designed to enhance social skills and performance accomplishment could be assessed with this instrument in future research. In this way, changes in children's self-efficacy in social situations could be documented.

One treatment implication from research on this instrument is that children generally feel more self-efficacy in nonconflict than in conflict situations. Clinicians desiring to enhance perceived social competence might therefore structure performance accomplishments in a conflict-free context and then gradually generalize the

acquired social skills to contexts characterized by conflict.

One study (Kazdin, Matson, & Esveldt-Dawson, 1984) increased children's perceived efficacy through role playing in an inpatient setting. However, the improved efficacy rating did not change the inpatients' behavior on their unit. In light of the social learning theory assumption that reinforcement is a performance variable rather than a learning variable (Rosenthal & Zimmerman, 1978), it may be necessary to employ reward contingencies in a treatment plan to promote a change in behavior subsequent to a change in efficacy expectations. This idea seems consistent with Schunk's (1983b) findings on reward contingencies with children. Actual behavior, he suggests, is guided by an awareness of which behaviors lead to desirable outcomes. Though Schunk's findings relate to the development of arithmetic competency, future research could test the generalizability of the same principle to social behavior.

Research in the area of performance accomplishment has shown that actual experience is a powerful intervention for strengthening the self-efficacy of children. A psychotherapeutic day camp offers many opportunities for creative interventions. However, it is important to communicate with parents about treatment goals to help them avoid undermining therapeutic achievements. Self-efficacy is enhanced by ability and effort attribution as the causal explanation of achievement. However, between the two, ability attribution

promotes self-efficacy more effectively. Self-efficacy inçreases when children master social competence skills in conflict-free settings and then generalize these skills to conflicted settings. Finally, clinicians must consider the issue of how to generalize gains in treatment settings to nontreatment settings. It is plausible that performance accomplishments would heighten efficacy expectations in a treatment context and reward contingencies would promote behavioral outworking of the new efficacy expectation in a real-life context. A comprehensive child treatment program could blend these two factors.

Most self-efficacy research with children has been done in the area of performance accomplishment. Self-efficacy posits three other sources of efficacy information. Although less research has been done in these categories, what has been done related to children will now be considered.

Vicarious Experience

Vicarious experience is a second source of information from which perceived efficacy is inferred (Bandura, 1977a). Though vicarious experience is theoretically less dependable than performance accomplishment in its power to promote self-efficacy, observational learning is a major tenet of social learning theory (Bandura, 1977b). The ability to make inferences from social comparison provides a helpful source of efficacy information.

Although one would conclude intuitively that modeling would be an effective treatment component with children, surprisingly few studies have been conducted to explore the effect of vicarious experience on the self-efficacy of children. Zimmerman and Ringle (1981) conducted the first study to explore the role of observational learning on the self-efficacy perceptions of young children. Children observed a model unsuccessfully attempt to solve an insolvable wire puzzle. The children were exposed to either high or low duration of effort and either confident or pessimistic verbal statements on the part of the model. Experimental and control subjects then attempted an insolvable embedded word puzzle. Probes were conducted to assess the self-efficacy estimates of the children when they attempted the tasks.

Experimental findings were mixed. The results indicated that modeling has a clear influence on children's persistence. However, the influence of the model on the children's self-efficacy was not significant. The experimenters concluded that more research needs to be conducted to assess the impact of models on efficacy perceptions in children. The longer the duration of modeling, the greater the persistence, but the less the self-efficacy. Children exposed to a long duration of modeling without a solution lowered their self-efficacy estimates. Apparently, when given adequate time at the task, the model's failure became a contradiction to his or her expressed efficacy. Failure

in this context also predicted a high level of task difficulty for the children.

In contrast, the efficacy estimates of children exposed to short duration modeling without a solution were not adversely affected. The modeled experience did not contradict the model's expressed self-efficacy, and the model's judgment was not undercut by failure. The authors concluded that efficacy modeling is a selective process for children that is influenced by the credibility and appropriateness of the model.

One treatment implication is that the use of modeling must be considered cautiously when success at a task is impossible. What is needed now is an experiment assessing a model's impact on the self-efficacy of children in a successful context, and perhaps even in a context of intermittent success and failure. Also, because observational learning was found to be a selective process for children, clinicians should be sensitive to how they are perceived by children.

Performance accomplishment, according to Bandura's (1977a) theory, has been assumed to provide the most influential and reliable source of self-efficacy information. However, Keyser and Barling (1981) studied the determinants of children's academic self-efficacy beliefs and found modeling rather than performance accomplishments to account for more variance in self-efficacy beliefs of children. The models in this study were the children's teachers. The

teachers' self-efficacy explained a significant amount of variance in the self-efficacy of children. Modeling also interacted with locus of control. Children with an external locus of control orientation were more likely to be influenced by modeling effects than were children with an internal locus of control.

In light of the unexpected findings of the Keyser and Barling (1981) research, a replication study was conducted (Barling & Snipelisky, 1983). They found that their research was consistent with Bandura's (1977a) assumption that performance accomplishment would be a more substantive source of efficacy information than modeling. Three explanations were offered to explain the discrepancies. First, Keyser and Barling (1981) measured efficacy and outcome expectations as a single combined variable. Bandura's (1977a) theory treats efficacy and outcome expectancies as separate variables. Second, Keyser and Barling operationalized performance accomplishments such that no performance feedback was given to the children. Third, Keyser and Barling used sixth-grade children only. All of these factors were altered by the Barling and Snipelisky (1983) research design. They focused on efficacy perceptions only, the provided performance feedback (considered to be a significant determinant of efficacy expectations), and they used children ranging from the second through the seventh grades. They explain the earlier unexpected findings with

sixth-grade subjects as most likely influenced by classroom climate rather than by a contradiction of Bandura's theory.

Treatment implications from this pair of studies underscore the importance of vicarious experience as a source of efficacy expectations. The issue is raised, however, concerning the possibility that the importance of vicarious experience may vary with children's ages and classroom climate. Does perception of efficacy from vicarious experience vary with different sources in differential proportion as a child grows? Does perceived classroom climate impact self-efficacy beliefs? These questions will have to be answered by future research.

Schunk (1981) also attempted to clarify the contribution of vicarious experience to self-efficacy in children. Adult modeling of cognitive operations was contrasted to didactic teaching for the enhancement of self-efficacy in children showing low arithmetic achievement. These treatments did not differ in their effect on self-efficacy. However, both treatment groups judged themselves significantly more efficacious than did the control group. Thus, modeling was seen to enhance self-efficacy, but it is unclear as to how modeling might differ from didactic teaching for treating problems in an educational setting.

Modeling was obviously an important component in several other studies (Jaycox et al., 1983; Mondell, Tyler, & Freeman, 1981; Schunk, 1981). However, the effect of modeling on self-efficacy was not assessed as a dependent

variable. Without such a measure we are left to infer that modeling had some effect on behavioral performance. However, it is impossible to speculate concerning the impact of modeling on the self-efficacy of children in these studies.

This survey of the literature leads to the conclusion that, with respect to vicarious experience as a source of self-efficacy perception, much clarifying research needs to be conducted before treatment implications can be drawn for children. It might be that vicarious experience more directly impacts behavior, which then becomes a performance accomplishment, which in turn becomes a source for efficacy perception. A variety of questions of this sort could be studied to clarify our understanding of how children's efficacy perceptions are impacted by modeling.

Verbal Persuasion

Verbal persuasion is obviously a major part of human experiences. Efficacy expectations based on verbal persuasion are taken by Bandura (1977a) to be weaker than performance accomplishments and vicarious experiences because they do not have an authentic experiential base in and of themselves.

Bandura and Schunk (1981) designed a program of self-directed learning for children deficient in mathematical tasks. Self-paced learning took place under conditions of proximal subgoals, distal goals, or no goals. These experimental conditions were suggestively mentioned by the experimenters to the subjects. Findings indicate that

self-motivation through proximal subgoals significantly proved most effective in promoting self-percepts of efficacy. Children in the distal goal group did not differ significantly from the no-goal controls in perceived self-efficacy.

A treatment implication for the clinician involved in treating educational problems would be to structure a mastery program based on short-range goals. The power of suggestion as verbal persuasion was found to be a powerful inducement to promote heightened percepts of self-efficacy. It seems plausible that application of this principle to other areas of therapeutic concern would be appropriate. Future research and clinical experimentation is needed to explore the use of verbal persuasion to enhance self-efficacy with children.

Emotional Arousal

Emotional arousal serves as an index of perceived efficacy. This source of efficacy expectations is particularly important for coping with situations perceived as threatening. Successful expectations theoretically correlate with no or low arousal of emotion and vice versa (Bandura, 1977a). Social learning theory stresses the informative function of emotional arousal. The cognitive appraisal of arousal mediates perceived self-competence, which in turn affects susceptibility to further self-arousal.

Research on efficacy percepts of children related to emotional arousal is very limited. A survey of the literature related to the prevention of children's maladaptive fears (King, Hamilton, & Murphy, 1983) explores possible means of preventing fears typically experienced by children in home, school, and health-care settings. The authors do not review empirical research in this article. They merely suggest that self-efficacy theory may be a helpful way to organize a child's coping experience. For the clinician, future research in these areas would be most helpful in treating the fears of children.

Again, other studies (Mondell et al., 1981; Wheeler & Ladd, 1982) deal with emotional arousal in children but in interaction with other sources of self-efficacy perception. It appears that much research is needed to enable clinicians to help children maintain a sense of self-efficacy when confronted with threatening and emotionally arousing stimuli.

## Treatment Implications

Treatment principles from the above findings will now be reviewed. These principles are reasonable implications of the experimental research on self-efficacy. However, they need to be tested in a clinical setting.

1. A comprehensive intervention to enhance self-efficacy can be structured in a psychotherapeutic day camp setting. Counselors can use everyday experiences and camp activities to enhance mastery of feelings and behavior to

promote self-efficacy. Collaboration with parents concerning therapeutic goals might prevent parents from undermining therapeutic achievements.

2. Feedback attributing achievement to past effort is preferred to giving instructions to a child to work harder. Such future-oriented instructions may undermine a child's sense of efficacy. An even better way to promote self-efficacy is to attribute achievement to ability rather than effort as its causal explanation.

3. The importance of vicarious experience may vary with the child's locus of control orientation. One study (Keyser & Barling, 1981) showed that children with an external locus of control orientation were more likely to be influenced by models than children with an internal locus of control orientation.

4. Perceived social competence should be built first in conflict-free settings and then generalized to conflict settings. Self-efficacy gained in a treatment setting can be generalized to a nontreatment setting with the use of reward contingencies designed to promote the outworking of the new efficacy expectation in a real-life context.

5. Use of modeling needs to be done cautiously in a context of failure. Failure of a model in the context of adequate time to accomplish a task may reduce the observer's sense of efficacy. Credible and appropriate models heighten the impact of vicarious experience in children.

6. Use of short-range goals rather than long-range goals promotes self-motivation.

## Conclusion and Recommendations

Self-efficacy theory (Bandura, 1977a) shows promise of becoming a comprehensive and parsimonious model for the psychotherapeutic treatment of children. To date, the bulk of the research centers on performance accomplishment as the primary means of enhancing efficacy percepts. Self-efficacy research with children needs to focus more on the impact of vicarious experience, verbal persuasion, and emotional arousal on the self-efficacy of children. Also, the possibility that the saliency of these sources of efficacy information may vary with the needs to be explored further (Barling & Snipelisky, 1983; Keyser & Barling, 1981).

Of particular interest to clinicians would be future research clarifying the cognitive processes in children that produce the efficacy expectations (Goldfried & Robins, 1982). Such research could focus on how conflicting information from each of the four sources of efficacy information is processed, weighted, and resolved. Such information could clarify our understanding of how to alter the self-efficacy perceptions of children most effectively.

Three other recommendations need to be made. First, although self-efficacy research design in general appears to be of a high quality, including good research design with high internal and external validity, there is a noticeable

lack of follow-up measurements. The inclusion of more follow-up measures in the future could strengthen the case for self-efficacy as a model for psychotherapeutic intervention with children. Second, more research needs to be done with a wider range of diagnoses and problems. Work with children having DSM III diagnoses of mental retardation, attention deficit disorder, conduct disorder, anxiety disorders of childhood, and so forth, needs to be more extensive. Also, clinicians would benefit from research on self-efficacy perception as it relates to children of divorce, moral development of children, and other environmental stressors that impinge on children. Third, generalizability of experimental results needs to be assessed. Does enhanced self-efficacy in one sphere generalize to other spheres? Addressing these issues in future research will help establish self-efficacy theory as a task specifying model for child psychotherapy.

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